SAN GORGONIO HYDROELECTRIC SYSTEM, SOUTH FORK DAM AND INTAKE
San Bernardino National Forest
Banning vicinity
Riverside County
California

HAER CA-2278-B
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

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HAER No. CA-2278-B

Location: The South Fork Dam and Intake are located southwest of the East Fork Dam and Intake, along the South Fork Whitewater River just east of Black Wheel Creek. These elements are located within the San Bernardino County portion of the system on the South Forks Whitewater River. They are located in Section 30; T.1S., R.2E. on the San Gorgonio Mountain USGS topographic map. The South Fork Dam is located at latitude: 34.062380, longitude:-116.819083. The coordinate represents the center of the South Fork Dam structure. This coordinate was obtained on June 30, 2010 using a GPS mapping grade unit accurate to +/- 3 after differential correction. The coordinate's datum is North American Datum 1983. The South Fork Dam location has no restriction on its release to the public.

Significance: The South Fork Dam and Intake are contributing features to the San Gorgonio Hydroelectric System. The system itself was found to form a locally significant district of resources with a high degree of integrity eligible for listing in the National Register of Historic Places under Criteria A and C. The system was found eligible under Criterion A, for its representation of 1920s hydroelectric development in southern California and the system was also found to be eligible under Criterion C for architecture and engineering. In terms of engineering the system is significant for its use of tanks rather than forebays, which represented a departure from typical western hydroelectric systems, using a technique more common to the eastern United States and its utilization automatic controls which were a new innovation in the 1920s and later became an industry standard. Additionally, in terms of architecture, the two powerhouses were found to be good examples of utilitarian structures influenced by Classical Revival style architecture.

Description: The South Fork Dam is located west of the East Fork Dam and Intake along the South Fork Whitewater River. Water from the South Fork Whitewater River is diverted by the South Fork Dam which consists of a poured concrete rectangular structure with a 24" diameter sliding gate with two flashboards flanking either side. There is a tapered poured concrete apron located directly south of the 24" diameter sliding metal gate. This 24" slide gate is used to control the flow of water and functions like a headgate, if the flow of the river is too high for the system the gate can be opened to allow less water to pass through the South Fork Dam Intake.

Once the water has been diverted by the concrete dam, it passes through a 2'4" wide metal trash rack. The trash rack is used to prevent large debris such as leaves and twigs which can seriously damage the system from entering the flowline. From the trash rack the water enters the concrete intake structure. It is rectangular in shape and made of poured concrete. It is approximately 5'-4" x 6'-0" with 1'-0" thick exterior walls at the north and west sides and a 2'-0" concrete wall at a southeast side. There is a 24" diameter metal slide gate, or headgate. The headgate regulates the flow of water into the system from the South Fork Dam. Once the water passes through the headgate it is funneled into a 1'-0" wide concrete flume covered with steel plates. As the water approaches the South Fork sandbox the flume covers change from steel plates to wooden planks.

The Sandbox is square in shape measuring 10'-0" x 10'-0". It is made up of two rectangular channels each with a width of 4'-0" and an angled base. The sandbox is utilized to separate small aggregate particles from the water before it enters the system. As the water enters the sandbox, sand and larger aggregate particles fall to the base of the first channel allowing clear water to flow through into the second channel. As the water settles in the second channel, any additional sand particles that may have passed through fall to the base of the angled channel. The angled base of the sandbox in both channels is critical in encouraging larger particles to settle prior to entering the flowline. The water then passes over a rectangular weir located at the south end of the sandbox. The weir measures 3'-0" wide and 1'-8" deep and is used to regulate the flow of water before it enters the gauging station to the south.

Once the water passes over the weir it enters a nearly triangular shaped gauging station with a porcelain water gauge affixed to the inner portion of the gauging station. Within the gauging station water from the East Fork Dam and Intake merges with the water from the South Fork Dam and Intake through a covered concrete conduit located at the east end of the gauging station. The water from both diversion dams and intakes is measured by the porcelain water gauge and are then funneled back into Flowline No. 1 though a 2'-0" wide opening. A section of the south fork flowline, just after the gauging station, was washed out in the 1938 flood and replaced with a 14 to 16 inch spiral weld steel pipe stone and concrete walls and support rods and cables suspends the pipe over Black Wheel creek; a partially legible date is inscribed into the concrete on one of the walls reads "6-15(?)-38." The pipe then empties into a flowline and travels southwesterly to Raywood Flats where it fills Tank No. 1, which collapsed in 1998.

History: The San Gorgonio Hydroelectric System was constructed from 1911-1923. The flowlines were completed by 1913 and the East Fork Dam and Intake were completed by 1923. The engineer for the project was Charles O. Poole and the contractor was C.D. Sotiras. A section of the flowline near the East Fork Division Dam was washed out in the flood of 1938 and replaced with steel pipes. Since 1938, there appear to be no additional alterations made to the South Fork Dam and Intake. Please see the Historic Context section in the general Historic American Engineering Record for the San Gorgonio Hydroelectric System (HAER No. CA-2278) for additional information.

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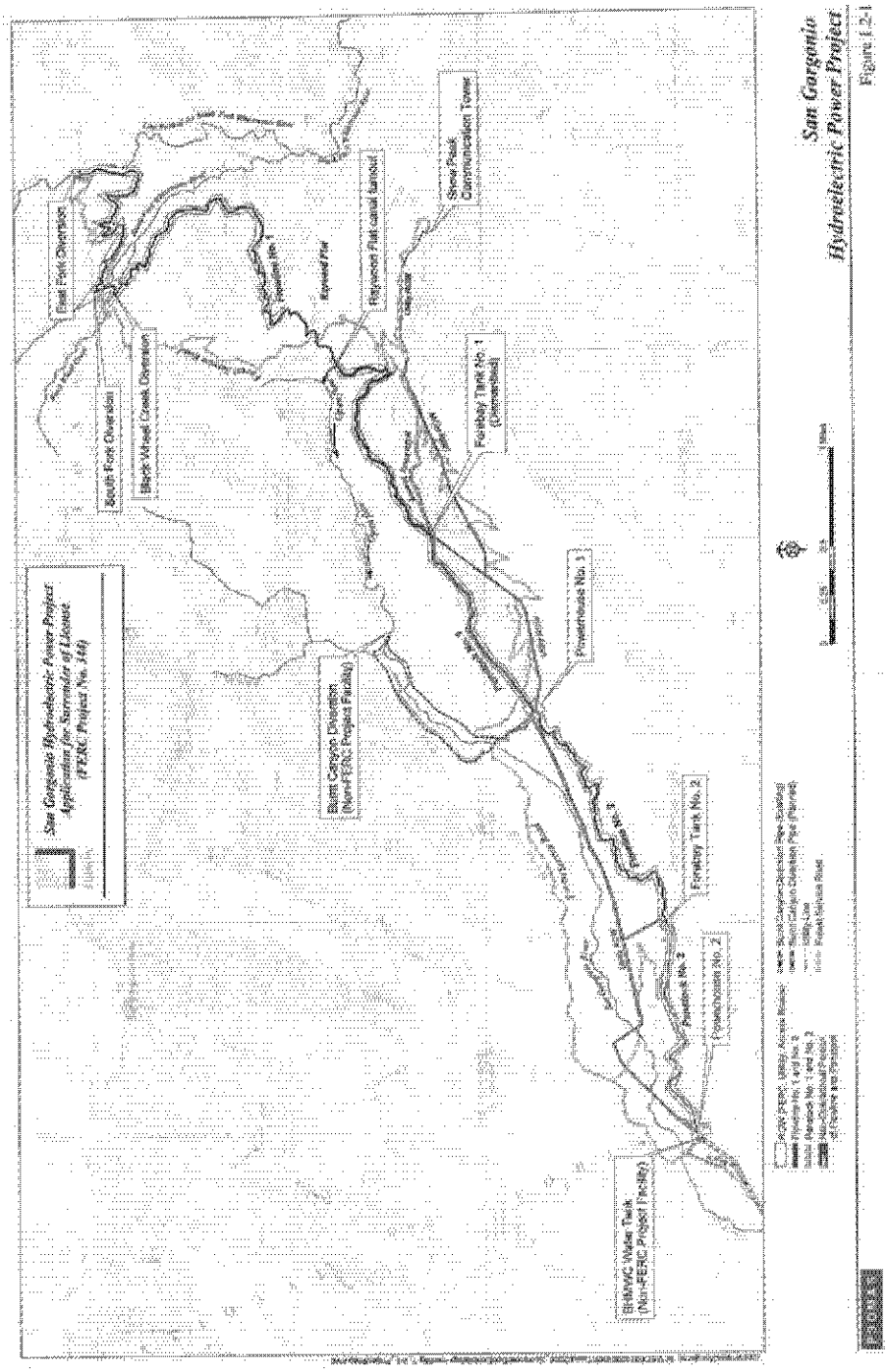
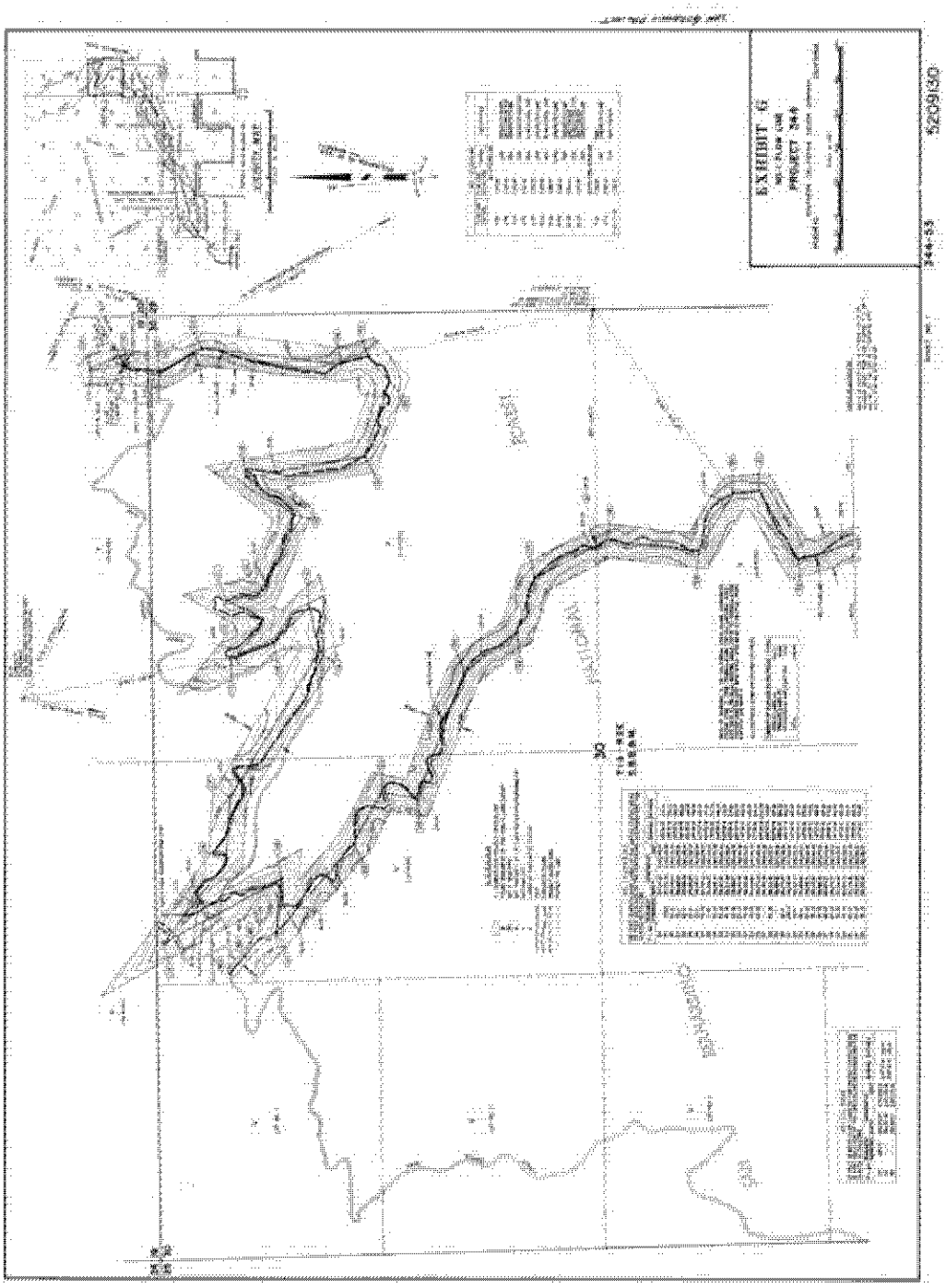
Historian: Ben Taniguchi, Historian, and Nicole Collum, Architectural Historian II, Galvin Preservation Associates, 1611 S. Pacific Coast Highway, #104, Redondo Beach, CA 90277, 2009-2010.

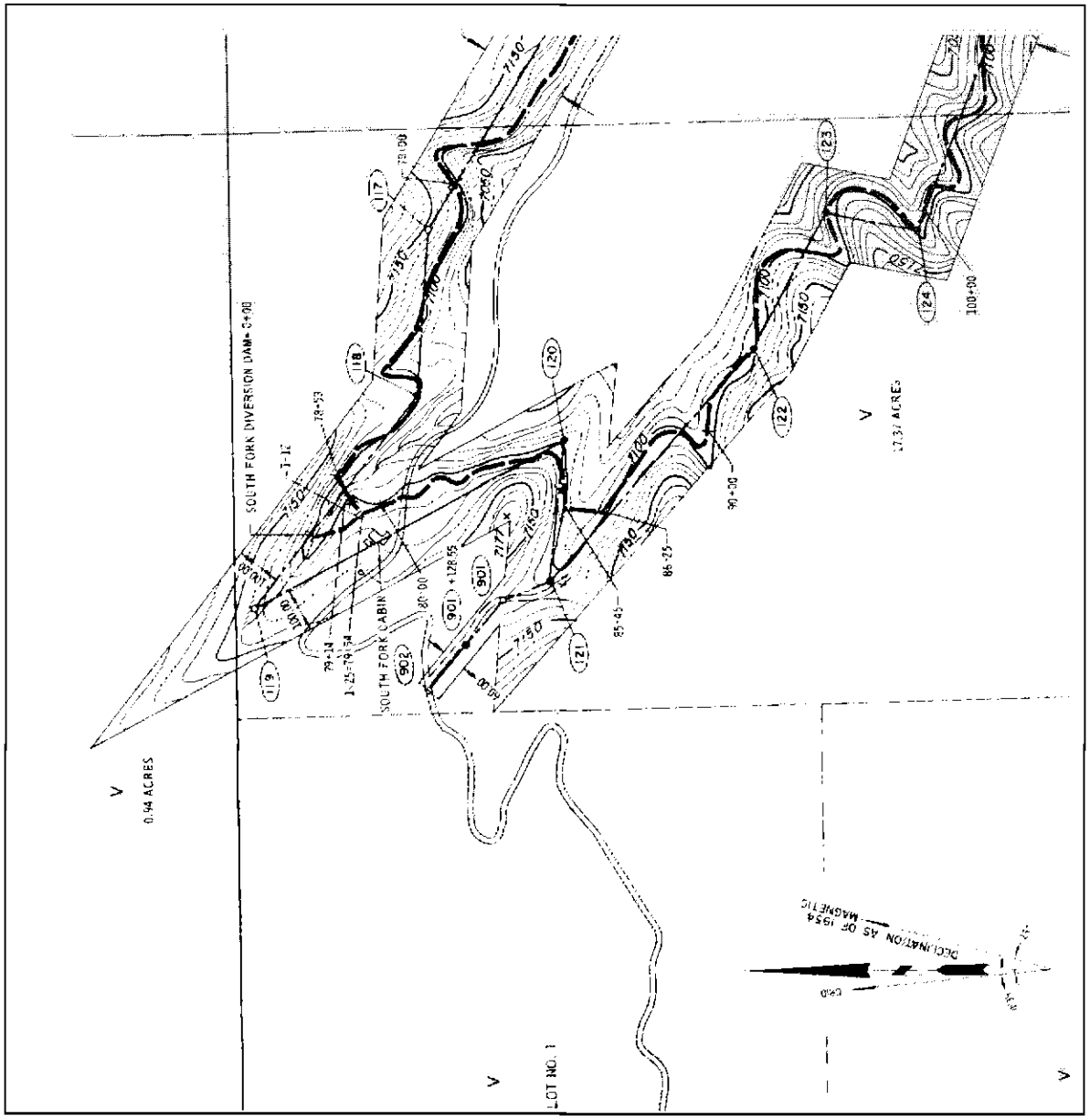
Project Information: SCE is planning to decommission the project's two power plants and part of their appurtenant water conveyance system. Some of the project components are scheduled to be decommissioned and removed, decommissioned and abandoned in place, or transferred to new ownership. The hydroelectric generators and other pieces of hardware and equipment will be removed from the powerhouse buildings, but the buildings will remain. Components slated for removal will be demolished using bulldozers where present access exists and other components will be removed using hand crews where there is no present vehicle access. The San Gorgonio Pass Water Agency plans to acquire those project facilities that are not decommissioned and use these remaining facilities to continue to divert and transport water for domestic and irrigation purposes to customers of the Banning Heights Mutual Water Company and the city of Banning. The transferred facilities would no longer be used for the generation of power. As a result of this project the San Gorgonio Hydroelectric System was documented with Historic American Engineering Records. The entire system was documented in an overview report, San Gorgonio Hydroelectric System HAER No. CA-2278 and each contributing element of the system was documented with separate supporting reports as follows: San Gorgonio Hydroelectric System, East Fork Dam and Intake, HAER No. CA-2278-A; San Gorgonio Hydroelectric System, South Fork Dam and Intake, HAER No. CA-2278-B; San Gorgonio Hydroelectric System, Powerhouse No. 1, HAER No. CA-2278-C; San Gorgonio Hydroelectric System, Tank No. 1 and Penstock No. 1, HAER No. CA-2278-D; San Gorgonio Hydroelectric System, Operator's Bungalow, HAER No. CA-2278-E; San Gorgonio Hydroelectric System, Operator's Garage, HAER No. CA-2278-F; San Gorgonio Hydroelectric System, Powerhouse No. 2, HAER No. CA-2278-G; San Gorgonio Hydroelectric System, Flowline No. 2, Tank No. 2, & Penstock No. 2, HAER No. CA-2278-H.



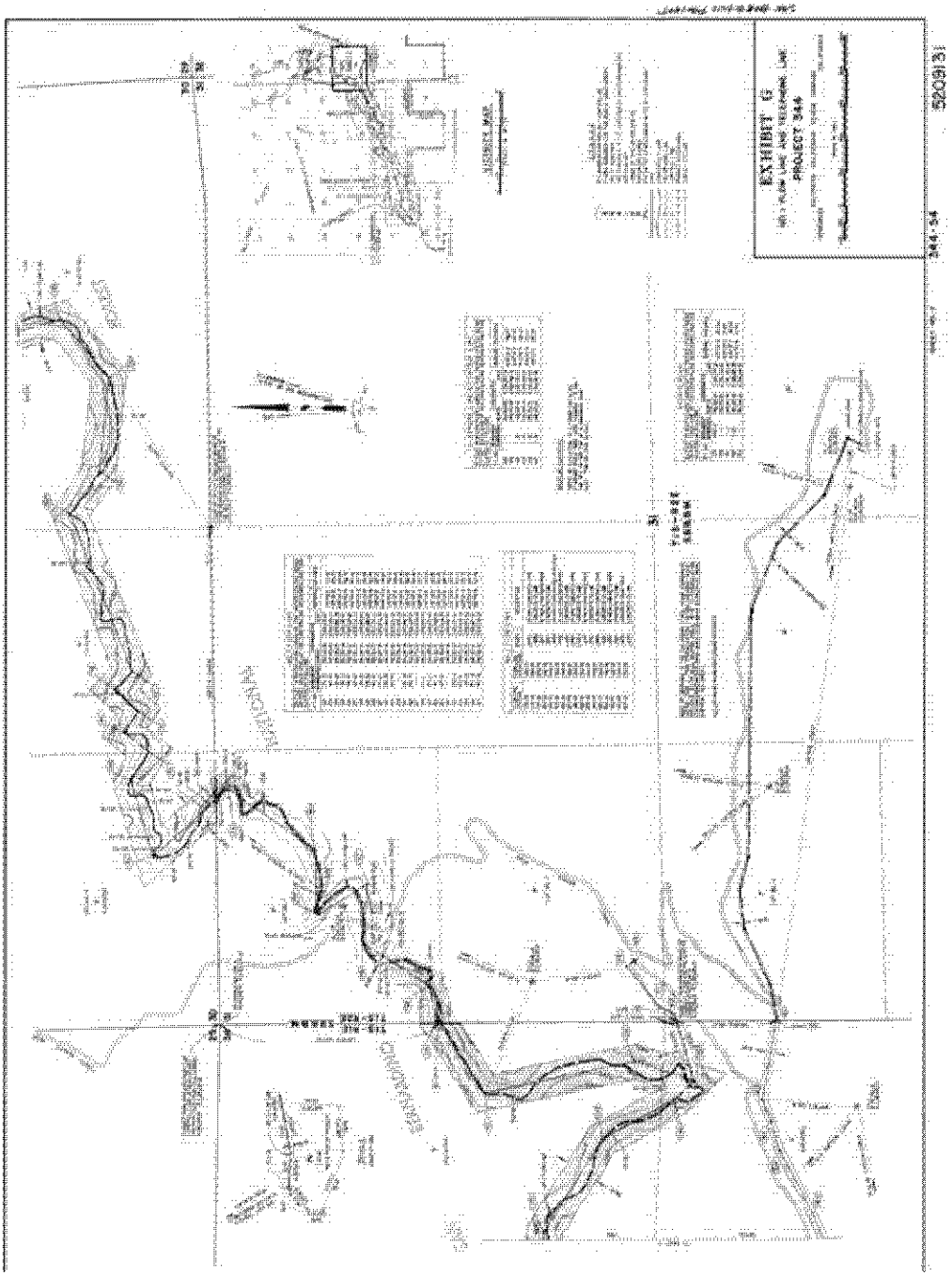
Reduced size overview map of the San Gorgonio Hydroelectric System. Map courtesy of Southern California Edison Company.



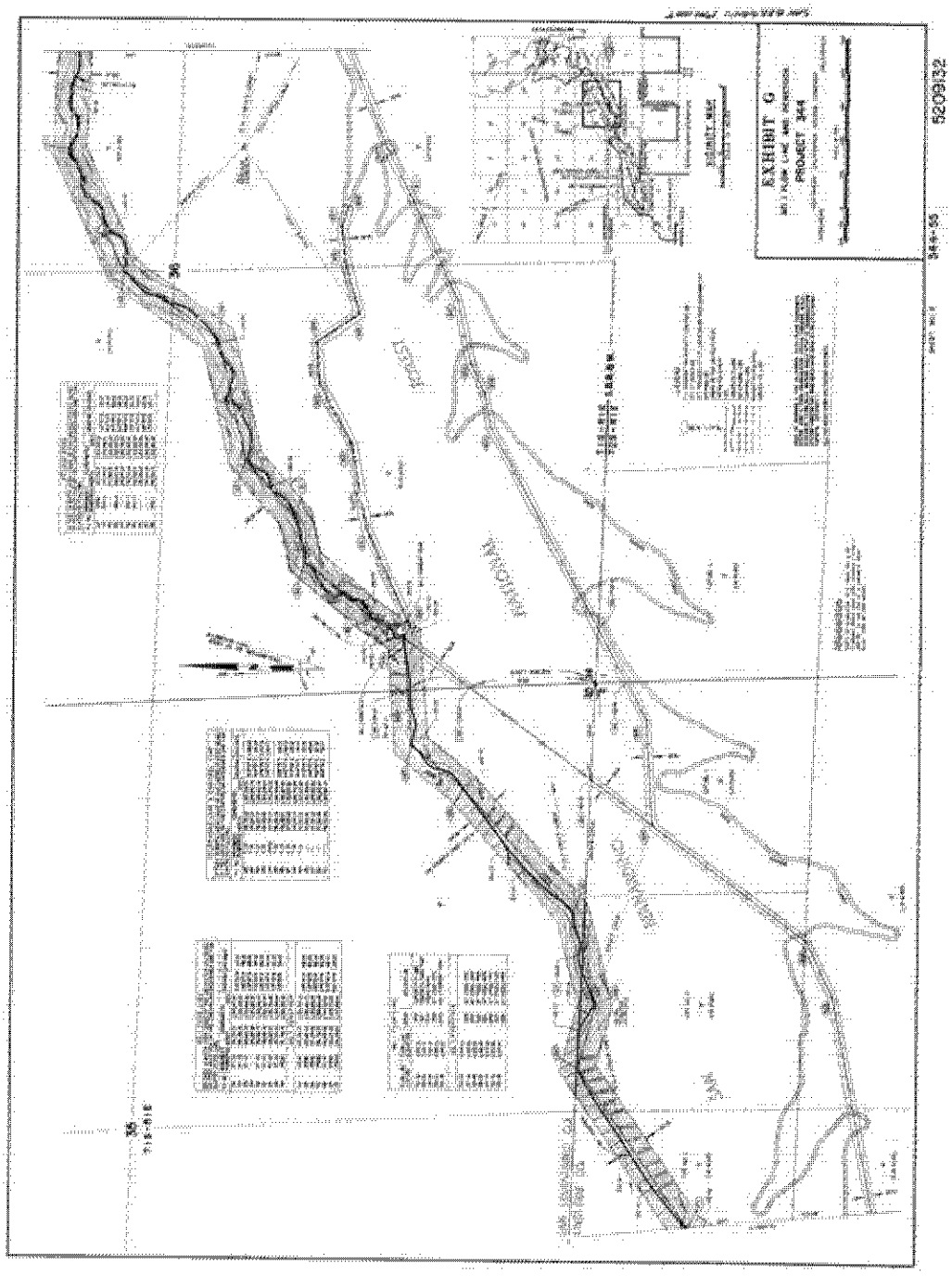
Reduced size plan of Flowline No. 1 located just below the South Fork Dam. The East Fork Dam is also visible to the northeast. Drawing courtesy of Southern California Edison Company. Full size image available in the Field Records Section of the HAER for the San Gorgonio Hydroelectric System, HAER No. CA-2278.



Detail of the South Fork Dam and Intake taken from the previous reduced size plan. Drawing courtesy of Southern California Edison Company.



Reduced size plan of Flowline No. 1 segment begins where the previous plan left off. Original drawing courtesy of Southern California Edison. Full size image available in the Field Records Section of the HAER for the San Gorgonio Hydroelectric System, HAER No. CA-2278.



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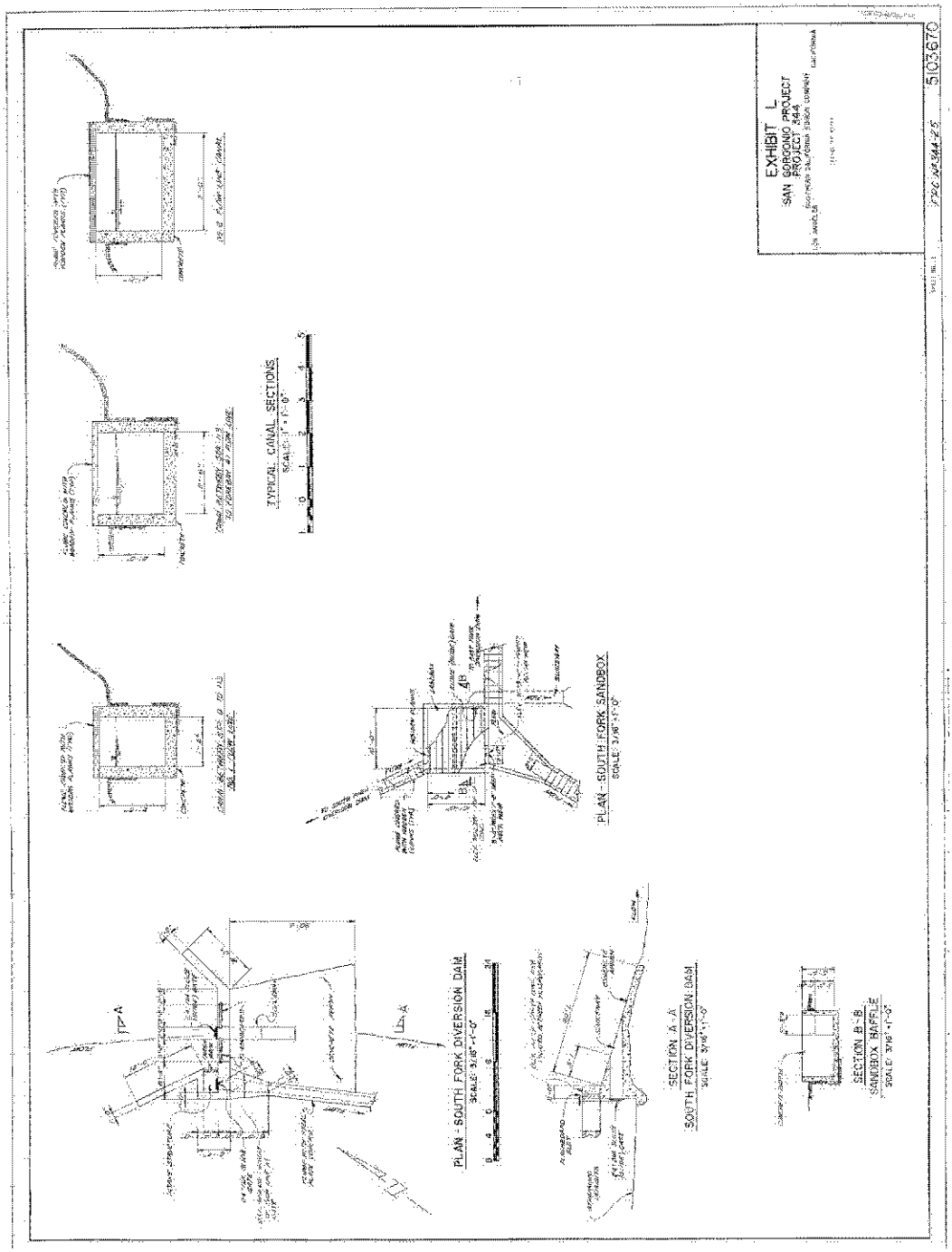
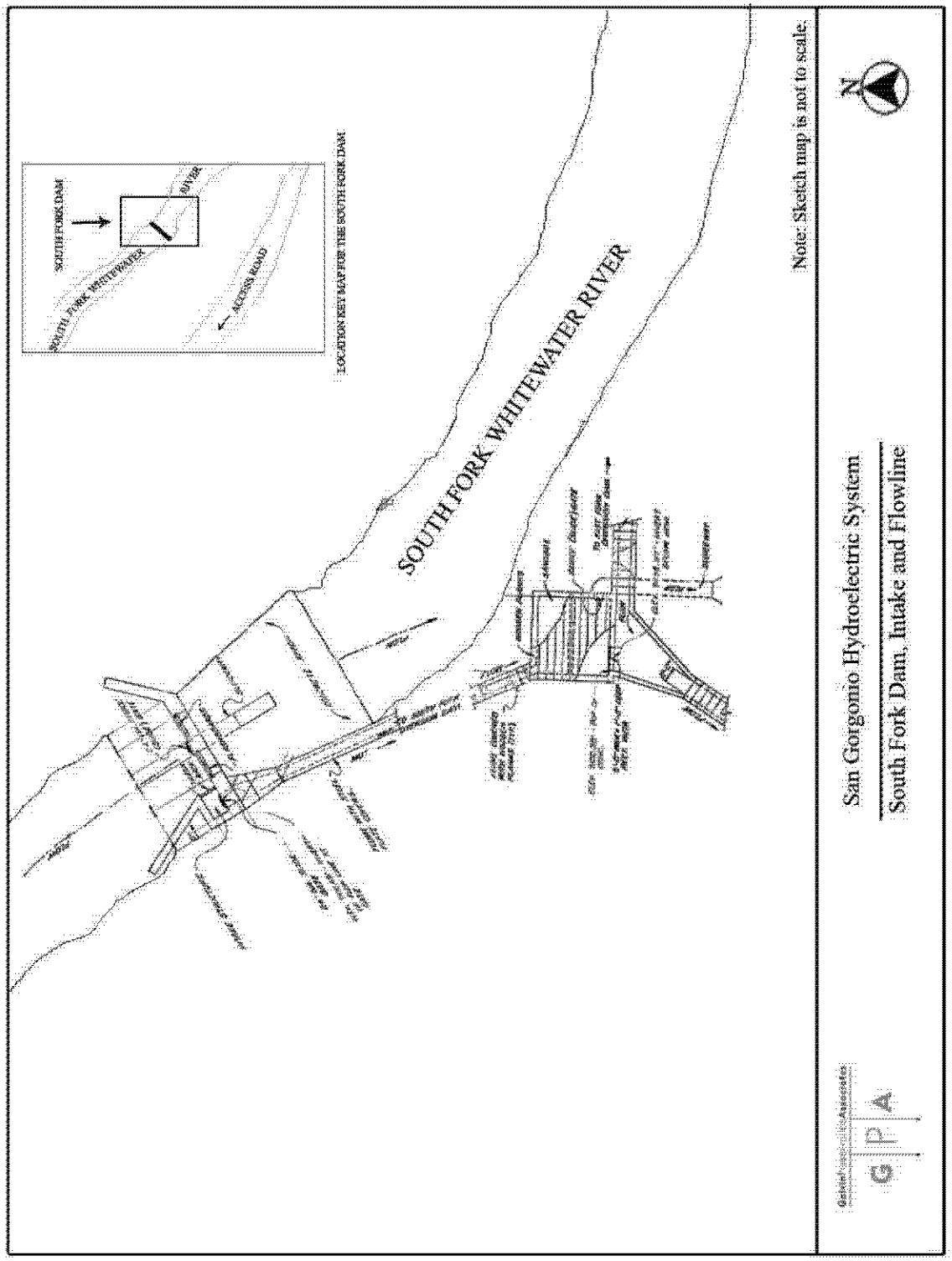


Reduced size plan, section and elevation of South Fork. Original drawing courtesy of Southern California Edison Company. Full size image available in the Field Records Section of the HAER for the San Gorgonio Hydroelectric System, HAER No. CA-2278.



South Fork Dam, Intake and Flowline site map. Map created by Galvin Preservation Associates 2010.